

CLAIMS

What is claimed is:

1. A heating cooker, comprising:
a cabinet to define a cooking cavity therein, the cooking cavity being open at a front thereof;
a fan chamber defined by recessing a rear wall of the cooking cavity at a predetermined area to a predetermined depth;
an air circulation fan installed in the fan chamber to circulate air of the cooking cavity;
a heater installed in the fan chamber to heat the air; and
a chamber cover mounted to the rear wall of the cooking cavity to cover an open front of the fan chamber, the chamber cover having a plurality of air suction ports at a central area thereof, with a plurality of air distribution ports provided along an edge of the chamber cover to guide the air from the fan chamber to the edge of the chamber cover to discharge the air to the cooking cavity.
2. The heating cooker according to claim 1, wherein the air distribution ports are defined by a plurality of protuberant parts which are provided along the edge of the chamber cover by protruding predetermined portions of the edge of the chamber cover toward the cooking cavity, so that the protuberant parts form channels directed outward and opened at the edge of the chamber cover.
3. The heating cooker according to claim 1, wherein the chamber cover is a size larger than a size of the open front of the fan chamber, covering the open front of the fan chamber.
4. The heating cooker according to claim 1, further comprising:
a microwave-supplying unit installed in the cabinet to supply microwaves into the cooking cavity, and both an inner surface of an inner casing and the chamber cover are coated with an insulating material to prevent occurrence of sparks caused by the microwaves at both the inner casing and the chamber cover.
5. The heating cooker according to claim 4, wherein the air distribution ports are defined by a plurality of protuberant parts which are provided along the edge of the chamber

cover by protruding predetermined portions of the edge of the chamber cover, so that the protuberant parts form channels directed outward and open at the edge of the chamber cover.

6. The heating cooker according to claim 4, wherein the chamber cover is a size larger than a size of the open front of the fan chamber to cover the open front of the fan chamber, and the chamber cover is mounted to an inner surface of the rear wall of the cooking cavity, so that a gap is maintained between the edge of the chamber cover and the inner surface of the rear wall of the cooking cavity, to prevent the microwaves from being introduced from the cooking cavity into the fan chamber and prevent occurrence of sparks caused by the microwaves at a portion where the chamber cover is mounted to the inner casing.

7. The heating cooker according to claim 6, wherein the chamber cover is mounted to the inner surface of the rear wall of the cooking cavity by use of a plurality of setscrews, and at least one boss is provided on one of the chamber cover or the inner surface of the rear wall of the cooking cavity at a portion where the chamber cover is screwed to the rear wall of the cooking cavity by the setscrews, maintaining the gap between the edge of the chamber cover and the inner surface of the rear wall of the cooking cavity.

8. The heating cooker according to claim 7, further comprising:
a sensing switch provided outside the cooking cavity to sense a tightened or released state of the setscrews which mount the chamber cover to the rear wall of the cooking cavity.

9. The heating cooker according to claim 7, wherein the gap maintained between the edge of the chamber cover and the inner surface of the rear wall of the cooking cavity is set to 3mm.

10. The heating cooker according to claim 4, wherein the edge of the chamber cover is folded to form a thick edge which prevents an electromagnetic field from being formed at the edge of the chamber cover.

11. The heating cooker according to claim 4, wherein each of the air distribution ports has a circumference of $\lambda/2$ or less.

12. The heating cooker according to claim 4, further comprising:

a food rack provided in the cooking cavity to support food therein, wherein the chamber cover is mounted to an inner surface of the rear wall of the cooking cavity by a setscrew installed at a position to correspond to the food rack.

13. The heating cooker according to claim 4, further comprising:
a wave-stirrer unit to stir the microwaves supplied from the microwave-supplying unit to the cooking cavity.

14. The heating cooker according to claim 13, wherein the wave-stirrer unit comprises:

a stirrer fan rotatably installed at a path through which the microwaves is supplied from the microwave-supplying unit to the cooking cavity; and
a drive motor to rotate the stirrer fan.

15. The heating cooker according to claim 1, further comprising:
a food rack having an embedded heater provided in the cooking cavity to support food therein; and
a power connector provided on the rear wall of the cooking cavity at a position corresponding to the food rack to supply electric power to the embedded heater of the food rack.

16. The heating cooker according to claim 15, wherein the fan chamber is placed at a left or right side of the rear wall of the cooking cavity, and the power connector is provided on the rear wall of the cooking cavity at a side which does not have the fan chamber.

17. The heating cooker according to claim 16, wherein when the power connector is placed at the left side of the rear wall of the cooking cavity, the air circulation fan is rotated counterclockwise, and when the power connector is placed at the right side of the rear wall of the cooking cavity, the air circulation fan is rotated clockwise.

18. The heating cooker according to claim 1, wherein the fan chamber is defined in the rear wall of the cooking cavity to have a rectangular shape, and is tilted to a side so that a lower surface of the fan chamber is inclined to remove impurities and washing water from the chamber.

19. The heating cooker according to claim 18, wherein the chamber cover has a rectangular shape to cover the open front of the fan chamber, and a number of the air distribution ports, provided at upper and lower sides of the edge of the chamber cover at trailing positions relative to a rotating direction of the air circulation fan, is larger than a number of the air distribution ports provided at leading positions relative to the rotating direction of the circulation fan.

20. The heating cooker according to claim 1, further comprising:
at least one heat-shielding unit mounted to an outer surface of the cooking cavity at a position outside the fan chamber; and
a drive motor to rotate the air circulation fan installed outside the heat-shielding unit.

21. The heating cooker according to claim 20, wherein the heat-shielding unit comprises:
a first heat-shielding plate mounted at a position outside the fan chamber; and
a second heat-shielding plate mounted at a position outside the first heat-shielding plate while being spaced apart from the first heat-shielding plate, and
the drive motor to rotate the air circulation fan is mounted to an outside surface of the second heat-shielding plate by a motor bracket.

22. The heating cooker according to claim 20, further comprising:
a cooling fan installed at a portion inside the cabinet to cool the drive motor that rotates the air circulation fan.

23. The heating cooker according to claim 4, wherein the microwave-supplying unit is installed in the cabinet at a position above the cooking cavity, and a cooling fan is installed in the cabinet at a position around the microwave-supplying unit to cool the microwave-supplying unit.

24. The heating cooker according to claim 1, wherein the chamber cover is mounted to an inner surface of the rear wall of the cooking cavity by a setscrew, and a sensing switch is provided outside the cooking cavity to sense a tightened or released state of the setscrew which mounts the chamber cover to the rear wall of the cooking cavity.

25. A heating cooker having a cabinet to define a cooking cavity therein and opened at a front thereof, comprising:

a fan chamber defined by recessing a rear wall of the cooking cavity at a predetermined area to a predetermined depth; and

a chamber cover mounted to the rear wall of the cooking cavity to cover an open front of the fan chamber, and having a plurality of air suction ports, and a plurality of air distribution ports provided along an edge of the chamber cover to guide hot air discharged from the fan chamber to the edge of the chamber cover to discharge the hot air to the cooking cavity.

26. The heating cooker according to claim 25, wherein the air suction ports and the air distribution ports of the chamber cover, and a spaced mounting structure of the chamber cover relative to the recessed rear wall of the cooking cavity, prevent microwaves from entering into the fan chamber.